

# Claims

- [c1] A method and apparatus for converting or translating descriptions of products encoded in the Universal Product Code (UPC) or Uniform Code Council 12 (UCC-12) format to the Electronic Product Code (EPC) format comprising:
  - a means of loading and storing registers;
  - and a means of multiplying, dividing, shifting or adding register contents.
- [c2] A method according to claim 1 wherein the operation of storage of a register involves only shift operations.
- [c3] A method according to claim 1 wherein the operation of storage of a register involves only multiplication or division operations.
- [c4] A method according to claim 1 wherein the operation of storage of a register involves a mix of multiplication, division, or shift operations.
- [c5] A method according to claim 1 wherein the entire operation of the method or parts of it are embodied within digital logic gates.

- [c6] A method according to claim 1 wherein the entire operations of the method or parts of it are embodied within a Hamiltonian or other matrix operation.
- [c7] A method according to claim 1 wherein all values to be incorporated into the resulting EPC code are extracted from input and from the UPC code before being incorporated, via a single bit-field storage command into the target EPC storage range.